

Proportional Reasoning

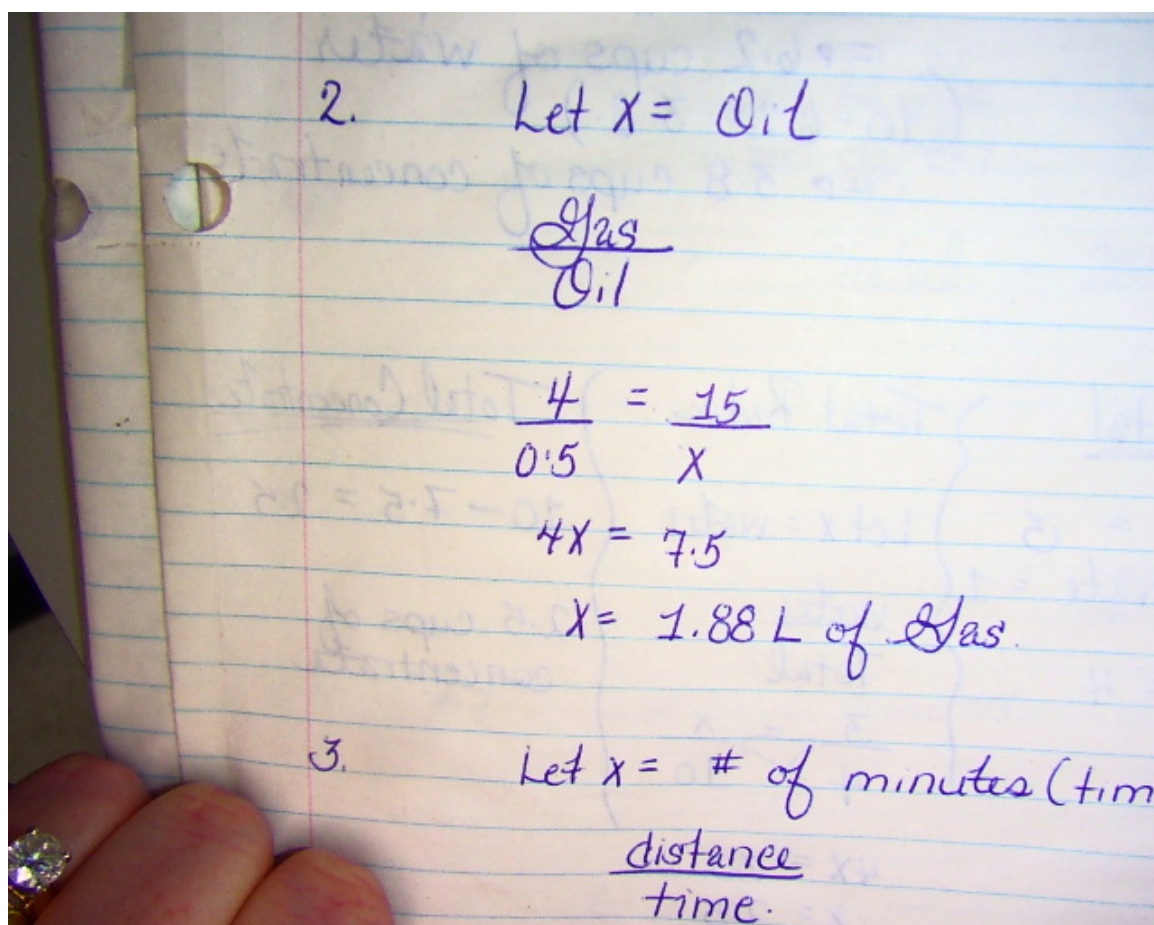
1. Let $x = \#$ of minutes

Words
minutes

$$\frac{105}{1} = \frac{3200}{x}$$

$$105x = 3200$$

$$x = 30.5 \text{ words}$$



$$4x = 7.5$$

$$x = 1.88 \text{ L of Gas.}$$

3. Let $x = \#$ of minutes (time)

distance
time.

$$\frac{2500}{8} = \frac{5800}{x}$$

$$2500x = 46400$$

$$x = 18.56$$

18.56 minutes

#4. Batch Total } Total Ratio

of water = 8
of concentrate = 5
Total = 13

Let $x = \text{water}$

$\frac{\text{water}}{\text{total}}$

$$\frac{8}{13} = \frac{x}{10}$$
$$13x = 80$$
$$x = 6.2 \text{ cup.}$$

$\Rightarrow 6.2 \text{ cups of water}$
($10 - 6.2 = 3.8$)
 $\Rightarrow 3.8 \text{ cups of concentrate}$

Batch Total } Total Ratio } Total Concentration

of water = 3
of concentrate = 1
Total = 4

Let $x = \text{water}$

$\frac{\text{water}}{\text{Total}} = \frac{x}{10}$

$\frac{3}{4} = \frac{x}{10}$

$4x = 30$
 $x = 7.5$
7.5 cups of water

$10 - 7.5 = 2.5$
2.5 cups of concentrate

#6. (a) Let $x = \text{Oil}$.

$\frac{\text{Gas}}{\text{Oil}}$

$$\frac{25}{3} = \frac{5}{x}$$

$$25x = 15$$

$$x = 0.6 \text{ L of Oil}$$

<u>Batch Total</u>		<u>Total Ratio:</u>
Liters of Gas =	25 L	Let $x = \text{Gas}$.
Liters of Oil =	7.5 L	

(b) Batch Total | Total Ratio: | Total Oil

Liters of Gas = 25 L | Let $x = \text{Gas}$ | $3 - 2.7 = 0.3$

Liters of Oil = 3 L | Gas | * 0.3 L of Oil

Total = 28 L | Total. |

$$\frac{25}{28} = \frac{x}{3}$$

$$28x = 75$$

$$x = 2.7 \text{ L}$$

* 2.7 L of Gas.

f. Let $x = \text{centimeters}$.

cm
m.

$$\frac{7}{70} = \frac{x}{25}$$

* 2.7 L of G

#7. Let $x =$ centimeters.

cm
m.

$$\frac{7}{10} = \frac{x}{25}$$

$$70x = 175.$$

$$x = 2.5 \text{ cm.}$$

#8. Flour
Chocolate chips

$$\frac{2.25}{1.5} = 1.5$$

$$1.5 = \frac{3}{2}$$

#9. Let Grant = X

Grant
Greg

$$\frac{6}{7} = \frac{X}{115}$$

$$\frac{7X}{7} = \frac{690}{7}$$

$$X = 98.6 \text{ Kg.}$$

$$\begin{array}{r} + \quad 110 \\ 7x = \frac{690}{7} \\ x = 98.6 \text{ Kg.} \end{array}$$

#10. $\frac{\text{height}}{\text{length}}$

$$\frac{1}{12} = 0.08\overline{3}$$

$$\frac{2}{20} = \frac{1}{10}$$

$$\frac{1}{10} = 0.1 \text{ (This ramp is unsafe.)}$$

- #11. a) $8:4$ or $2:1$
b) $4:1$
c) $4:17$

Page 27

#1. $\$ \frac{1053.00}{12 \text{ sinks}} = \$ 87.75 / \text{sink}$.

#2. $\frac{19.99}{7\text{kg}}$ $\frac{35.95}{14\text{kg}}$ $\frac{50.99}{21\text{kg}}$

